Pediatric Medical Emergencies: Anaphylaxis/Allergic Reaction

I. All Provider Levels

1. Follow the General Patient Care guidelines in section A1.
2. Establish patient responsiveness.
    A. If cervical spine trauma is suspected, manually stabilize the spine.
3. Check the airway.
    A. Open the airway using a head tilt chin lift if no spinal trauma is suspected, or modified jaw thrust if spinal trauma is suspected.
    B. Consider placing an oropharyngeal or nasopharyngeal airway adjunct if the airway cannot be maintained with positioning.
    C. Suction as necessary.
4. Assess the patient's breathing including rate, auscultation, inspection, effort and adequacy of ventilation as indicated by chest rise.
    A. Obtain a pulse oximeter reading.
5. If no breathing is present, then position the airway and start bag valve ventilations using 100% oxygen.
    A. Refer to the vital signs chart for appropriate rates.

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I. All Provider Levels (continued)

6. If airway cannot be maintained, begin ventilations with B-V-M and initiate advanced airway management using a combi-tube.

> ***Note Well:*** *Do not use a combi-tube on a patient younger than 16 years of age or less than 5-feet tall.*

> ***Note Well:*** *The EMT-I and EMT-P should use ET intubation.*

7. If breathing is adequate, place the child in a position of comfort and administer high flow, 100% oxygen.

   A. Use a non-rebreather mask or blow by as tolerated.

8. Assess for signs and symptoms of anaphylactic shock.

   A. If signs and symptoms of anaphylactic shock are present

      i. Administer an epinephrine auto-injector.
         a. Check the administration guidelines on the bottle and the expiration date.

      ii. Place child in a trendelenburg position (raise patient's feet).

9. Call for ALS support. Initiate care and do not delay transport waiting for an ALS unit.

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I. All Provider Levels (continued)

10. If bronchospasm is present in a patient with adequate ventilation

    A. Administer 2.5 mg albuterol via nebulizer over a 10-15 minute period.

    B. If bronchospasm persists, albuterol may be repeated once for a total of two nebulizers.

> ***Note Well:*** *ALS Providers may administer an additional 2.5 mg albuterol (for a total of 3) if patient continues to exhibit significant respiratory distress and shows no improvement from initial nebulizer treatment.*

11. Assess circulation and perfusion.

12. Establish an IV of normal saline using an age-appropriate large bore catheter with large caliber tubing.

> ***Note Well:*** *BLS Providers cannot start an IV on a patient less than eight years of age*

> ***Note Well:*** *An ALS unit must be en route or on scene.*

> ***Note Well:*** *If IV access cannot be readily established and the child is younger than 6 years of age then ALS Providers only may proceed with IO access. If the child is over 6 years of age, then contact Medical Control for IO access.*

    A. Do not delay transport to obtain vascular access.

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II. Advanced Life Support Providers

1. Initiate cardiac monitoring.

2. If patient meets criteria for anaphylactic shock and has not received an epinephrine treatment via auto-injector,

   A. Administer epinephrine 1:1000 solution at 0.01 mg/kg (maximum single dose 0.3 mg) via subcutaneous injection.

   B. Massage the injection site vigorously for 30-60 seconds.

   C. If anaphylactic shock criteria are still present, (with or without auto-injector treatment) repeat epinephrine 1:1000 solution at 0.01 mg/kg (maximum single dose 0.3 mg) via subcutaneous injection.

3. If evidence for shock persists,

   A. Administer a fluid bolus of normal saline at 20ml/kg set to maximum flow rate.

   B. Reassess patient after a bolus. If signs of shock persist, bolus may be repeated at the same dose up to two times for a maximum total of 60 ml/kg.

4. Administer diphenhydramine at 1.0 mg/kg via IV/IO/IM route or PO to a maximum dose of 25 mg.

5. If the patient continues to show signs of anaphylaxis

   A. Administer 2.0 mg/kg methylprednisolone via IV or IM route. (*Med Control Option Only*)

   B. Do not delay transport.

III. Transport Decision

1. Contact Medical Control for additional instructions.
2. Initiate transport to the nearest appropriate facility as soon as possible.
3. Perform focused history and detailed physical exam en route to the hospital.
4. Reassess at least every 3-5 minutes, more frequently as necessary and possible.

IV. The Following Options are Available by Medical Control Only

1. Methylprednisolone, 2.0 mg/kg, IV or IM.
2. Additional treatments of Albuterol, 2.5 mg in 3 cc of saline via nebulizer.
3. IO access for patients greater than 6 years of age.

This protocol was developed and revised by Children's National Medical Center, Center for Prehospital Pediatrics, Division of Emergency Medicine and Trauma Services, Washington, D.C.

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